

**COMMONWEALTH OF VIRGINIA**  
**Department of Environmental Quality**  
**Tidewater Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS**

The Smithfield Packing Co., Inc.  
Smithfield, Virginia  
Permit No. **TRO - 60270**  
AFS Id. No.: 51-093-00011

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, The Smithfield Packing Co., Inc. has applied for a Title V Operating Permit for its Smithfield facility which consists of three divisions - South Division (formerly Smithfield Packing), North Division (formerly Gwaltney), and Ham and Products Division. The three independently operated, contiguous meat processing plants, under the common control of The Smithfield Packing Co., Inc., share a common air stationary source registration number VA-60270. The Department has reviewed the three applications, and has prepared a single three-part Title V Operating Permit for the three plants.

Engineer/Permit Contact: \_\_\_\_\_ Date: April 3, 2008

Air Permit Manager: \_\_\_\_\_ Date: April 3, 2008

Deputy Regional Director: \_\_\_\_\_ Date: April 3, 2008

## **STATEMENT OF LEGAL AND FACTUAL BASIS, PART 1**

### **THE SMITHFIELD PACKING CO., INC.- SOUTH DIVISION**

#### **I. FACILITY INFORMATION**

##### Permittee

The Smithfield Packing Co., Inc.  
P.O. Box 489  
Smithfield, VA 23430

##### Facility

The Smithfield Packing Co., Inc.-South Division  
501 North Church Street  
Smithfield, VA 23430

County-Plant Identification Number: 51-093-00011

#### **II. SOURCE DESCRIPTION**

NAICS Codes: NAICS 311612- Meat Processed from Carcasses, and 311613- Rendering and Meat Byproduct Processing.

Smithfield Packing Co., Inc.-South Division, a meat packing and rendering plant, together with Smithfield Packing Co., Inc.-North Division (formerly Gwaltney), a contiguous meat packing plant, and Smithfield Packing Co., Inc.- Ham and Products Division, a contiguous food processing plant, are independently operated facilities that operate under the common control of Smithfield Packing Co., Inc. The three facilities have been determined, under Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution (9 VAC 5, Chapter 80), to represent a single stationary source of air emissions. Based on the NSR permit limits and the potential to emit of non-permitted units, the source is Title V major for SO<sub>2</sub>, NO<sub>x</sub>, and CO. Located in an attainment area, it is also PSD major for those pollutants, belonging to one of the 28 source categories with fossil fuel boilers totaling more than 250 million BTU/hour heat input. A three-part Title V permit format is used to reflect each facility's compliance responsibilities delegated by Smithfield Packing Co., Inc., to facilitate direct compliance relationships between the state and the three facilities.

Main plant boilers URN 1 and URN 2 at Smithfield Packing Co., Inc.-South Division, are existing boilers installed prior to March 17, 1972, the new source review (NSR) applicability date. Main plant boilers URN 3 and URN 4 were installed in 1973 and 1978, respectively. Both boilers URN 1 and URN 4 were permitted on June 13, 2007, for the addition of a variable speed draft (VSD), a blow down heat recovery system, and an economizer. Rendering plant boilers URN 40 and 41 were recently installed (to replace boiler URN 5) as permitted in the NSR permit dated September 30, 2005, which was subsequently incorporated into the June 13, 2007 NSR permit. Boilers URN 1 through URN 4 use natural gas, distillate oils, and low sulfur residual oils, while boilers URN 40 and 41 are permitted for natural gas, distillate oils, and animal/vegetable oils.

Hog carcasses are sanitized and the meat is then processed, packaged, and shipped for resale. Hog parts not fit for human consumption are processed in the inedible rendering plant for animal feed. Solids are removed, and brown grease is recovered, prior to release of plant wastewater into the municipal wastewater treatment plant. Rendering equipment as installed in 1988 includes blood dryer URN 7 and continuous cooker URN 35. The latter was replaced in 2004. Both units were determined to be exempt from minor NSR permitting.

Emissions of Carbon Monoxide (CO), Nitrogen Oxides (NOX), Sulfur Dioxide (SO<sub>2</sub>), Volatile Organic Compounds (VOC), and Particulate Matter (PM and PM-10) are by-products of the combustion of fuel oil and natural gas.

Odor is a concern with the rendering plant since residential areas are in close proximity. Hence, emission controls are directed toward odor elimination. Emission controls at this rendering plant consist of a condenser (to remove condensable particulate emissions from the high temperature cooker exhaust stream) in series with a venturi scrubber (to remove noncondensable particulate matter). The emission control for plant ventilation air consists of a 4,000 CFM induction fan system, with ducts located at collection points adjacent to the centrifuge and presses that handle the material leaving the cooker. The collected air is ducted to the venturi scrubber. Additionally, PM-10 is emitted from grinding and screening of solids (cracklings) from the screw presses and other rendering operations, primarily dryers processing blood and hair. PM emission standards for existing sources in Chapter 40 of the regulations apply.

### **III. COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

#### IV. EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
<b>Fuel Burning Equipment</b>							
URN 1	S1	Cleaver Brooks boiler 1970, modified in 2007 by addition of a variable speed draft (VSD), a blow down heat recovery system, and an economizer	30.5 MMBTU/hr	NA	NA	NA	6/13/07 NSR
URN 4	S4	Cleaver Brooks boiler 1978, modified in 2007 by addition of a VSD, a blow down heat recovery system, and an economizer	34.8 MMBTU/hr	NA	NA	NA	6/13/07 NSR
URN 2	S2	Iron Fireman/BE & S boiler, 1966	26.5 MMBTU/hr	NA	NA	NA	6/13/07 NSR
URN 3	S3	Iron Fireman/ Superior boiler, 1973	26.5 MMBTU/hr	NA	NA	NA	6/13/07 NSR
URN 40	S40	Cleaver Brooks boiler 2005, NSPS Dc	32.659 MMBTU/hr	NA	NA	NA	06/13/07 NSR
URN 41	S41	Cleaver Brooks boiler 2005, NSPS Dc	32.659 MMBTU/hr	NA	NA	NA	06/13/07 NSR
<b>Process Equipment</b>							
URN 7	S35	Dupps Blood Ring Dryer 2000B, installed in 1988	5.5 MMBTU/hr, 2,300 lb/hr finished blood meal product	Venturi scrubber, Dupps Model 4, 4,000 cfm	C35	PM-10, odor	Exempt (9/25/02 NSR)
URN 35	S35	Dupps Inedible Rendering Continuous Cooker, installed in 1988, replaced in 2004	46,000 lb/hr input, 23,000 lb/hr output	AC Corporation Shell-in-tube Condenser, and Dupps Model 4 Venturi scrubber, 4,000 cfm	C35	PM-10, odor	Exempt (1/13/04 letter)

\*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

## V. EMISSIONS INVENTORY

A copy of the 2006 annual emission update is attached. Emissions are summarized in the following tables.

2006 Actual Emissions

	2006 Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>
Total	5.8	15.5	1.9	3.1	19.0

2006 Facility Hazardous Air Pollutant Emissions

Pollutant	2006 Hazardous Air Pollutant Emission in Tons/Yr
Formaldehyde	0.02
Lead Compounds	0.00003

## VI. FUEL BURNING EQUIPMENT REQUIREMENTS

### A. Limitations

#### **Boilers URN 40 and 41:**

The two boilers were new equipment initially permitted on 9/30/05; the permit was later incorporated into the 6/13/07 NSR which was prompted primarily by the economizer project (discussed later). These two boilers have low NO<sub>x</sub> burners and flue gas recirculation (Condition 3 of 6/13/07 NSR), and subject to NSPS Subpart Dc (Condition 14 of 6/13/07 NSR). The approved fuels are natural gas, distillate oil, and animal fat/vegetable oils (Condition 8 of 6/13/07 NSR). Conditions for fuel specifications and fuel certifications meet NSPS Subpart Dc requirements (Condition 11 and 12 of 6/13/07 NSR). The fuel throughput limits were set to ensure that emissions are below the PSD significant levels (Condition 16 of 6/13/07 NSR). Exclusive use of natural gas presents no problem (Condition 10 of 6/13/07 NSR). SO<sub>2</sub> emission limit of 39.6 tons/year can be met with combustion of 1,100,000 gal distillate oil containing up to 0.5% sulfur (calculated emissions 39.4 tons), and natural gas for the remainder of the time as natural gas contains negligible amount of sulfur. When the same distillate oil throughput is used with animal fat/vegetable oil the rest of the time, emissions would be slightly greater than 40 tons/year. Therefore, a formula was developed to reduce the distillate oil throughput when animal fat/vegetable oil is used, based on the relative SO<sub>2</sub> emission factors for the two fuels, 0.9 lbs/1000 gal versus 71 lbs/1000 gal, or a ratio of 1 to 78.9 (Condition 9 of 6/13/07 NSR):

Distillate oil throughput limit (gallons/year) =  $d = 1,110,000 - (f/78.9)$  where

f=gallons of animal fat/vegetable oils, fired in 12 consecutive months by boilers URN 40 and 41 combined.

Visible emission limits of 10% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20% opacity (Condition 19 of 6/13/07 NSR) are a state BACT requirement (9 VAC 5-80-260) which is more stringent than NSPS Subpart Dc.

**Boilers URN 1 to 4:**

The approved fuels for boilers URN 1 to 4 are natural gas and low sulfur (up to 0.5%) distillate oil and residual oil (Condition 4 of 6/13/07 NSR). Fuel specifications and certifications are required (Conditions 6 and 7 of 6/13/07 NSR).

The facility submitted permit application in 2006 to modify boilers URN 1 and URN 4, and three other boilers in the Smithfield Packing Co., Inc.- North Division. The project mainly involved the addition of economizer to each of the five boilers; hence, it is called the “economizer” project. Based on EPA NSR/PSD database, the project would be a PSD modification if the net emission increase (NEI) was significant, i.e.  $NEI \geq 40$  tons/year  $SO_2$  as applicable for this case. As the permit application was being processed, the Virginia Regulations for the Control and Abatement of Air Pollution for major sources or major modifications in PSD Areas (9 VAC 5 Chapter 80 Article 8) were amended on 9/01/06 to allow the use of projected actual emissions in place of future potential to emit for the NEI estimate. The facility projected an annual limit of 1,125,000 gallons oil (distillate and residual oil combined), 0.5% S maximum, for all 5 boilers which worked out to be 225,000 gal/year for each boiler or 450,000 gallons for both boilers (Condition 5 of 6/13/07 NSR) to keep the projected NEI for  $SO_2$  below 40 tons/year for the “economizer” project. Any natural gas usage will not significantly contribute to the  $SO_2$  emissions, however, it would do so to the  $NO_x$  emissions. To keep the projected NEI for  $NO_x$  below 40 tons/year for the economizer project, the facility is required to make monthly calculation of the annual  $NO_x$  emissions using DEQ-approved procedure to ensure that the emission limits are not exceeded (Condition 5 of 6/13/07 NSR). Emission limits for the two boilers are listed in Condition 15 of 6/13/07 NSR. The two boilers are also subject to 9 VAC 5-50-80, the visible emission limits for new and modified sources of 20% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity. (Condition 18 of 6/13/07 NSR)

Boilers URN 2 and URN 3 are existing boilers which have never been modified. The following Virginia Administrative Codes that have specific emission requirements for existing sources have been determined to be applicable:

9 VAC 5-40-80- Visible emission limits of 20% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60% opacity (Condition 17 of 6/13/07 NSR);

9 VAC 5-40-900- PM emission limits- The maximum allowable emission ratio, E, in pounds of particulate per million BTU input, shall be determined by the following equation:

$$E = 1.0906H^{-0.2594}, \text{ where } H \text{ is the total heat input capacity in million BTU per hour.}$$

Maximum allowable particulate emissions for each fuel burning equipment unit shall be the product of the rated capacity and the emission ratio.

Hence, the calculated limits are:      0.389 lbs PM/MMBTU heat input  
   10.3 lbs PM/hr each boiler

Based on AP-42 (Table 1.3.1, 9/98), PM (filterables) EF for combustion of residual oil containing 0.5% S is 7.815 lbs/1000 gal. Hence, emission rate with the worst case fuel would be:

$$[7.815 \text{ lbs}/(1000 \text{ gal} \times 0.15 \text{ MMBTU/gal})] \times 26.5 \text{ MMBTU/hr} = 1.4 \text{ lbs PM/hr which is lower than the limit.}$$

9 VAC 5-40-930-  $SO_2$  emission limits - The maximum emissions shall be determined by the following equation:  
 $S = 2.64K$ , where S = allowable emission of sulfur dioxide expressed in pounds per hour, and K = heat input at total capacity expressed in MMBTU per hour.

The calculated  $SO_2$  emission limit for Boilers URN 2 and 3 combined is 139.9 lbs  $SO_2$ /hr.

Based on AP-42 (Table 1.3.1, 9/98),  $SO_2$  EF for combustion of residual oil containing 0.5% S is 78.5 lbs  $SO_2$ /1000 gal. Hence, emission rate with the worst case fuel for both boilers combined would be:

$$[78.5 \text{ lbs}/(1000 \text{ gal} \times 0.15 \text{ MMBTU/gal})] \times 26.5 \text{ MMBTU/hr} \times 2 = 27.7 \text{ lbs } SO_2/\text{hr which is lower than the limit.}$$

Therefore, the boilers are expected to comply with the PM and SO<sub>2</sub> from Virginia Administrative Codes.

Boiler operator training and availability of written operating procedures and maintenance schedules are required (Condition 13 of 6/13/07 NSR).

#### **B. Monitoring and Recordkeeping**

The once-a-week visible emission observations for boilers URN 1 to 4, URN 40 and 41 (Condition 25 of the 6/13/07 NSR) meet Part 70 requirements for periodic monitoring.

Permit requires maintenance of records for fuel throughputs, fuel certifications, calculated distillate oil throughput limits for URN 40 and 41, calculated NO<sub>x</sub> emissions for URN 1 and 4, all stack tests, visible emission evaluations, and periodic visible emission observations, and boiler operator training (Condition 26 of 6/13/07 NSR permit).

#### **C. Testing**

Stack tests are required for boilers URN 40 and 41 while firing animal fat/vegetable oils (Condition 21 of 6/13/07 NSR) to demonstrate initial compliance with the emission limits for PM, SO<sub>2</sub> and NO<sub>x</sub> which were based on the data submitted by the permittee during processing of the NSR permit application. Visible emission evaluation by Method 9 (40 CFR 60 Appendix B) is also required for the boilers while firing distillate oil or animal fat/vegetable oils to demonstrate initial compliance with the opacity limits (Condition 22 of 6/13/07 NSR).

The permit does not require testing for boilers URN 1 to 4.

The Department and EPA have authority to require testing not included in this permit if necessary to determine initial or continuing compliance with an emission limit or standard (Condition 20, 23, and 24 of 6/13/07 NSR).

#### **D. Reporting**

Initial notification requirements for boilers URN 40 and 41 (Condition 28 of 6/13/07 NSR) as required by NSPS Subpart Dc have mostly been completed except for the performance test as the facility has not fired animal fat/vegetable oils. The two boilers are also subject to semi-annual fuel reporting requirements pursuant to NSPS Subpart Dc (Condition 27 of 6/13/07 NSR).

#### **E. Streamlined Requirements**

Condition 29 of 6/13/07 NSR- Permit Invalidation condition has not been included because the economizer project has been completed.

Other general conditions of the 6/13/07 NSR are covered under the General Conditions section of the Title V permit except for Conditions 33 and 35 of 6/13/07 NSR which are placed in the Facility Wide section.

### **VII. RENDERING PROCESS EQUIPMENT REQUIREMENTS – (URN 7 and URN 35)**

#### **A. Limitations**

The rendering equipment was installed in 1988, and has been determined to be exempt from NSR permitting. Nevertheless, to prevent causing odor nuisance to the nearby neighborhood, emissions from the continuous cooker URN 35 are controlled by a shell-in-tube condenser in series with a venturi scrubber, and emissions from the blood ring dryer URN 7 and associated equipment are ducted to a venturi scrubber. The latter is equipped with devices to continuously monitor the water flow (at least 8 gallon per minute) and the pressure drop across the venture throat (between 5 and 10 inches of water).

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-40-260- PM emissions from existing sources shall not exceed the limits specified by the following equation:

$$E = 4.10 P^{0.67}$$

where: E = emission rate in lb/hr  
P = process weight in tons/hr

Even though URN 7 and URN 35 were installed after 1972, the rule is applicable pursuant to 9 VAC 5-50-10 D which states that 9 VAC 5 Chapter 40 rules may apply to new sources if they are more restrictive; the alternative in this case is no limit.

The blood ring dryer URN 7 has a rated capacity of 2,300 lbs/hr product or 1.15 tons/hr product. Assuming the process weight rate (input) is 4,600 lbs/hr or 2.3 tons /hr,  $E = 7.2$  lbs PM/hr. Based on the AP-42 (Table 9.5.3-2, 9/95) controlled emission factor of 0.76 lbs PM-10/ton product and an assumed 60% PM control efficiency during testing, the uncontrolled emission factor is  $0.76 \text{ lbs/ton} / (1-0.60) = 1.9 \text{ lbs/ton}$  product. Hence, uncontrolled emissions would be  $1.9 \text{ lbs/ton} \times 1.15 \text{ tons/hr} = 2.2 \text{ lbs PM/hr}$ . Therefore, the dryer is expected to be in compliance with this Chapter 40 emission standard without any controls under normal operations. The specification of a venturi scrubber for PM emission reduction adds additional assurance of compliance.

For the continuous cooker URN 35 with a process weight rate of 46,000 lbs/hr or 23.0 tons/hr,  $E = 33.5$  lbs PM/hr. The Dupps Company used an uncontrolled emission factor of 0.697 lb/ton input for the continuous cooker. Hence, uncontrolled emissions would be  $0.697 \text{ lb/ton input} \times 23.0 \text{ tons input /hr} = 16.0 \text{ lbs PM/hr}$ . The cooker is therefore expected to be in compliance with this Chapter 40 emission standard without any controls under normal operations. The specification of a condenser and a venturi scrubber for PM emission reduction adds additional assurance of compliance.

The required periodic monitoring and recordkeeping of scrubber performance parameters will indicate operations are conducted with air pollution control equipment that is being properly maintained.

9 VAC 5-50-80- Visible emission limits of 20% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity.

## **B. Monitoring and Recordkeeping**

Since URN 7 and 35 have add-on controls for PM, applicability of 40 CFR 64- Compliance Assurance Monitoring (CAM) has to be determined.

As discussed above, the estimated uncontrolled emissions for URN 7 and URN 35 are 2.2 lbs/hr and 16.0 lbs/hr, respectively.

Hence, the annual potential to emit without control for URN 7 is:  
 $2.2 \text{ lbs/hr} \times 8760 \text{ hrs/yr} \times 1 \text{ ton/2000 lbs} = 9.6 \text{ tons/yr}$

The annual potential to emit without control for URN 35 is:  
 $16.0 \text{ lbs/hr} \times 8760 \text{ hrs/yr} \times 1 \text{ ton/2000 lbs} = 70.1 \text{ tons/yr}$



They are below the major source level. Hence, CAM is not applicable to the units.

Part 70 requirements for periodic monitoring are met as follows.

The continuous monitors for the venture scrubber flow rate and pressure drop shall be observed once per shift, and log entries are made.

The scrubber shall be inspected and washed-out weekly.

Inspection for leaks shall be made monthly on the ductwork, condenser, and scrubber.

Internal inspection of the condenser and the scrubber for structural integrity shall be made semiannually.

Visible emission observation of the scrubber stack shall be made at least once each week during daylight hours; necessary corrective action and appropriate log entries shall be made.

Maximum rendering equipment capacities shall be assessed annually to derive the PM limit from the above 9 VAC 5-40-260 equation.

The permit includes requirements for maintaining records of all above monitoring.

### **C. Testing**

The permit does not require testing for the rendering equipment. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

### **D. Reporting**

There are no reporting requirements.

### **E. Streamlined Requirements**

There are no NSR permit conditions on the rendering process to streamline.

## **VIII. FACILITY WIDE CONDITIONS**

### **A. Limitations**

9 VAC 5-50-20 F-Volatile organic compound disposal condition was deemed a useful reminder for the facility.

Condition 35 of 6/13/07 NSR- DEQ may request shutdown of facility to maintain ambient air quality standards. This is a NSR general condition which is not in the Title V General Conditions.

### **B. Record Keeping**

Condition 26 of 6/13/07 NSR- Records of Maintenance/Operating Procedures. This is also to demonstrate compliance with General Condition O of Title V permit on Startup, Shutdown and Malfunction.

Condition 33 of 6/13/07 NSR- Records of Malfunctions. This is a NSR general condition which is not in the Title V General Conditions.

## **IX. GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

### **Comments on General Conditions**

#### **a. Condition B. Permit Expiration**

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.1-20.01:2 and §10.1-1185 of the *Code of Virginia*, and the “Department of Environmental Quality Agency Policy Statement No. 2-2003”.

This general condition cites Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Operating Permits for Stationary Sources, with the following sections:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

9 VAC 5-80-150. Action on Permit Applications

#### **b. Condition F. Failure/Malfunction Reporting**

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

#### **c. Condition J. Permit Modification**

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit for Stationary Sources

9 VAC 5-80-190. Changes to Permits.

9 VAC 5-80-260. Enforcement.

9 VAC 5-80-1100. Applicability, Permits for New and Modified Stationary Sources

9 VAC 5-80-1790. Applicability, Permits for Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas.

#### **d. Condition U. Malfunction as an Affirmative Defense**

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

This general condition cites the sections that follow:

9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction

9 VAC 5-80-110. Permit Content

## **X. STATE ONLY APPLICABLE REQUIREMENTS**

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable to the rendering process:

9 VAC 5 Chapter 40, Part II, Article 2: Emission Standards for Odors

9 VAC 5-50-140- No owner or other person shall cause or permit to be discharged into the atmosphere from any affected facility any emissions which cause an odor objectionable to individuals of ordinary sensibility.

Requirements on handling of rendering wastes, transit area surfaces, ponded waters, and finished product spills to meet the odor standards, and necessary recordkeeping to demonstrate compliance are added as allowed by 9 VAC 5-80-300.

## **XI. FUTURE APPLICABLE REQUIREMENTS**

There are no future applicable requirements anticipated for the facility.

## **XII. INAPPLICABLE REQUIREMENTS**

The following requirements have been identified as being inapplicable:

Citation	Title of Citation	Description of Applicability
40CFR60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	This subpart is not applicable to boilers URN 1 to 4 as these units were constructed prior to the applicability date of the NSPS (6/9/89), and the addition of economizers to URN 1 and URN 4 in 2007 does not meet the definition of NSPS modification.
9 VAC 5-40-880 et seq., Part II, Article 8	Emissions Standards for Fuel Burning Equipment	Boiler URN 1 and URN 4 are not subject to the PM and SO <sub>2</sub> emission standards of Article 8. They were installed in 1978, and commenced operation before October 5, 1979, specified in 9 VAC 5-40-890 C as the date prior to which a unit's capacity shall be considered part of the fuel burning equipment (FBE) capacity of the facility, however, they are subject to the more stringent requirements of NSR permit dated 6/13/07.

Citation	Title of Citation	Description of Applicability
9 VAC 5-40-880 et seq., Pt II, Article 8	Emissions Standards for Fuel Burning Equipment	Food processing ovens are not subject to this article, because (1) they combust only gaseous fuels, and (2) each unit's heat input capacity is less than 10 million Btu/hr.
40CFR 60, Subpart Kb, as amended on October 15, 2003	NSPS for Volatile Organic Liquid Storage Vessels Constructed, Modified, or Reconstructed After 23 July 1984 with Storage Capacity Greater Than 75 Cubic Meters (19,817 gallons)	Tank URN 23 has capacity of 12,000 gallons, less than the threshold for Kb applicability (19,817 gallons). Tanks URN 22 has capacity of 24,812 gallons but stores residual oil that has maximum true vapor pressure less than 2.16 psi.
40 CFR 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	The facility does not have any internal combustion engines that are subject to the rule.

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A 3 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions." For example, see Condition III.A.17 on opacity limits for existing boilers URN 2 and 3 that comply with the above regulations.

### **XIII. COMPLIANCE PLAN**

There is no compliance plan associated with this permit.

### **XIV. INSIGNIFICANT EMISSION UNITS**

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation <sup>1</sup>	Pollutant(s) Emitted (9 VAC 5-80-720B)	Rated Capacity (9 VAC 5-80-720 C)
5	Grease tank, 19,183-gal AST	9 VAC 5-80-720 A	NA	NA

Emission Unit No.	Emission Unit Description	Citation <sup>1</sup>	Pollutant(s) Emitted (9 VAC 5-80-720B)	Rated Capacity (9 VAC 5-80-720 C)
6	Grease tank, 15,600-gal AST	9 VAC 5-80-720 A	NA	NA
8	Dupps Hair Dryer	9 VAC 5-80-720 C	NA	3.5 MMBTU/hr 3 tons/hr
9	Grease tank, 15,600-gal AST	9 VAC 5-80-720 A	NA	NA
10	Grease tank, 15,600-gal AST	9 VAC 5-80-720 A	NA	NA
11	Julian Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
12	Julian Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 million Btu/hr
13	Julian Food Processing Oven	9 VAC 5-80-720 C	NA	1.87 MMBTU/hr
14	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
15	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
16	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
17	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
18	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
19	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
20	Gasoline Storage Tank, 1,000-gal AST	9 VAC 5-80-720 B	VOC	NA
21	Diesel Fuel Dispensing Tank, 1,000-gal AST	9 VAC 5-80-720 A	NA	NA
22	Residual Oil Storage Tank , 24,812-gal AST	9 VAC 5-80-720 B	VOC	NA
23	Distillate Oil Tank, 12,000-gal AST	9 VAC 5-80-720 B	VOC	NA
24	Refrigeration Oil Tank, 1,000-gal AST	9 VAC 5-80-720 B	VOC	NA
25	Hydraulic Oil Storage Tank, AST	9 VAC 5-80-720 C	NA	550 gallons
26	Hydraulic Oil Storage Tank, AST	9 VAC 5-80-720 C	NA	550 gallons
27	Edible Mineral Oil Tank , 2860-gal AST	9 VAC 5-80-720 A	NA	NA
28	Kerosene Storage Tank, 500-gal AST	9 VAC 5-80-720 B	VOC	NA
29	Hydraulic Oil Storage Tank, AST	9 VAC 5-80-720 C	NA	480 gal

Emission Unit No.	Emission Unit Description	Citation <sup>1</sup>	Pollutant(s) Emitted (9 VAC 5-80-720B)	Rated Capacity (9 VAC 5-80-720 C)
30	Waste Oil Storage Tank, AST	9 VAC 5-80-720 C	NA	500 gallons
31	Rendered Grease Tank, 65,000-gal AST	9 VAC 5-80-720 A	NA	NA
32	Rendered Grease Tank, 65,000-gal AST	9 VAC 5-80-720 A	NA	NA
37F	Truck Road Dust	9 VAC 5-80-720 B	PM	NA
38F	Wastewater Treatment Facilities, 1.5 mm gal/day	9 VAC 5-80-720 B	VOC	NA
39F	Ammonia Refrigeration	9 VAC 5-80-720 B	NH3	NA
42	Grease tank, 19,183-gal AST	9 VAC 5-80-720 A	NA	NA
43	Diesel tank for fire suppression system, 200 gal	9 VAC 5-80-720 A	NA	NA

<sup>1</sup>The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

## **XV. CONFIDENTIAL INFORMATION**

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

## **XVI. PUBLIC PARTICIPATION**

The proposed permit will be placed on public notice in The Virginian-Pilot from February 17, 2008 to March 18, 2008.

## **STATEMENT OF LEGAL AND FACTUAL BASIS, PART 2**

### **THE SMITHFIELD PACKING CO., INC.- NORTH DIVISION**

#### **I. FACILITY INFORMATION**

##### Permittee

The Smithfield Packing Co., Inc.  
P.O. Box 489  
Smithfield, VA 23430

##### Facility

The Smithfield Packing Co., Inc.-North Division  
601 North Church Street  
Smithfield, VA 23430

County-Plant Identification Number: 51-093-00011

#### **II. SOURCE DESCRIPTION**

NAICS Codes: NAICS 311611- Animal (except poultry) Slaughtering, and NAICS 311612- Meat Processed from Carcasses.

Smithfield Packing Co., Inc.-North Division (formerly Gwaltney), a meat packing plant, together with Smithfield Packing Co., Inc.-South Division, a contiguous meat packing and rendering plant, and Smithfield Packing Co., Inc.-Ham and Products Division, a contiguous food processing plant, are independently operated facilities that operate under the common control of Smithfield Packing Co., Inc. The three facilities have been determined, under Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution (9 VAC 5, Chapter 80), to represent a single stationary source of air emissions. Based on the NSR permit limits and the potential to emit of non-permitted units, the source is Title V major for SO<sub>2</sub>, NO<sub>x</sub>, and CO. Located in an attainment area, it is also PSD major for those pollutants, belonging to one of the 28 source categories with fossil fuel boilers totaling more than 250 million BTU/hour heat input. A three-part Title V permit format is used to reflect each facility's compliance responsibilities delegated by Smithfield Packing Co., Inc., to facilitate direct compliance relationships between the state and the three facilities.

Main plant boilers URN 51 to 54 at Smithfield Packing Co., Inc.-North Division are existing boilers, manufactured in 1972 or earlier. Three of the boilers, URN 52, 53, and 54, were permitted to modify by NSR dated June 12, 2007 for the addition of economizers. A newer boiler, URN 86, maximum rated heat input capacity of 6.3 million BTU per hour, was manufactured in 1994, and originally permitted for installation by NSR permit dated December 29, 2005. The latter also permitted four new smoke generators (URN 120 to 123) that use electricity to smoke saw dust, and six new smokehouse ovens (URN 110-115) that use natural gas. All permit conditions were subsequently incorporated in the NSR permit dated June 12, 2007.

All other units at the plant such as food processing ovens, hog singers, oil tanks...qualify as Insignificant Activities.

### **III. COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.



#### IV. EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
<b>Fuel Burning Equipment</b>							
URN 52	S52	Continental Boiler, 1968, installed before 3/17/72, modified in 2007 by addition of an economizer.	34.8 MMBTU/hr	NA	NA	NA	6/12/07 NSR
URN 53	S53	Continental Boiler, 1972, installed before 3/17/72, modified in 2007 by addition of an economizer.	34.8 MMBTU/hr	NA	NA	NA	6/12/07 NSR
URN 54	S54	Cleaver Brooks Boiler, 1972, installed in 1983, modified in 2007 by addition of an economizer.	29.3 MMBTU/hr	NA	NA	NA	6/12/07 NSR
URN 51	S51	Continental Boiler, 1958, installed before 3/17/72	25.9 MMBTU/hr	NA	NA	NA	6/12/07 NSR
URN 86	S86	Superior Boiler, Model 6-5-750L-GP, Serial #12172, 1994	6.3 MMBTU/hr	NA	NA	NA	06/12/07 NSR
<b>Process Equipment</b>							
URN 110-115	S110-115	Six Alkar Ovens with Maxon 435 burners, 2005	3.85 MMBTU/hr each	NA	NA	NA	06/12/07 NSR
URN 120	S110 & 111	Schroter Smoke Generator, Model #R-91 - 2005	8.3 kW (No fuel) 26 lbs sawdust/hr	NA	NA	NA	06/12/07 NSR
URN 121	S112 & 113	Schroter Smoke Generator, Model #R-91 - 2005	8.3 kW (No fuel) 26 lbs sawdust/hr	NA	NA	NA	06/12/07 NSR
URN 122	S114 & 115	Schroter Smoke Generator, Model #R-91 - 2005	8.3 kW (No fuel) 26 lbs sawdust/hr	NA	NA	NA	06/12/07 NSR
URN 123	S78 & 79	Schroter Smoke Generator, Model #R-91 - 2005	8.3 kW (No fuel) 26 lbs sawdust/hr	NA	NA	NA	06/12/07 NSR

\*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

## V. EMISSIONS INVENTORY

A copy of the 2006 annual emission update is attached. Emissions are summarized in the following tables.

2006 Actual Emissions

	2006 Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>
Total	2.3	11.2	0.08	2.9	13.4

2006 Facility Hazardous Air Pollutant Emissions

Pollutant	2006 Hazardous Air Pollutant Emission in Tons/Yr
Formaldehyde	0.000
Lead Compounds	0.0000

## VI. FUEL BURNING EQUIPMENT, OVENS, AND SMOKE GENERATORS APPLICABLE REQUIREMENTS -

Ovens and smoke generators do not meet the definition of fuel burning equipment but addressed in the same section for convenience.

### A. Limitations

#### **Boilers URN 51 to 54, and 86:**

The approved fuels for the above boilers are natural gas and low sulfur (up to 0.5%) distillate oil and residual oil (Condition 3 of 6/12/07 NSR). Fuel specifications and certifications are required (Conditions 7 and 8 of 6/12/07 NSR).

The facility submitted permit application in 2006 to modify boilers URN 52, 53 and 54, and two other boilers in the Smithfield Packing Co., Inc.- South Division. The project involved the addition of economizer to each of the five boilers; hence, it is called the “economizer” project. Based on EPA NSR/PSD database, the project would be a PSD modification if the net emission increase (NEI) was significant, i.e.  $NEI \geq 40$  tons/year SO<sub>2</sub> as applicable for this case. As the permit application was being processed, the Virginia Regulations for the Control and Abatement of Air Pollution for major sources or major modifications in PSD Areas (9 VAC 5 Chapter 80 Article 8) were amended on 9/01/06 to allow the use of projected actual emissions in place of future potential to emit for the NEI estimate. The facility projected an annual limit of 1,125,000 gallons oil (distillate and residual oil combined), 0.5% S maximum, for all 5 boilers which worked out to be 225,000 gal/year for each boiler or 675,000 gallons for three boilers (Condition 5 of 6/12/07 NSR) to keep the projected NEI for SO<sub>2</sub> below 40 tons/year for the “economizer” project. Any natural gas usage will not significantly contribute to the SO<sub>2</sub> emissions, however, it would do so to the NO<sub>x</sub> emissions. To keep the projected NEI for NO<sub>x</sub> below 40 tons/year for the economizer project, the facility is required to make monthly calculation of the annual NO<sub>x</sub> emissions using DEQ-approved procedure to ensure that the emission limits are not exceeded (Condition 5 of 6/12/07

NSR). Emission limits for the three boilers are listed in Condition 9 of 6/12/07 NSR. The three boilers as well as URN 86 are also subject to 9 VAC 5-50-80, the visible emission limits for new and modified sources of 20% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity. (Condition 12 of 6/12/07 NSR)

Boiler URN 51 is an existing boiler that has never been modified. The following Virginia Administrative Codes that have specific emission requirements for existing sources have been determined to be applicable:

9 VAC 5-40-80- Visible emission limits of 20% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60% opacity (Condition 11 of 6/12/07 NSR);

9 VAC 5-40-900- PM emission limits- The maximum allowable emission ratio, E, in pounds of particulate per million BTU input, shall be determined by the following equation:

$E = 1.0906H^{-0.2594}$ , where H is the total heat input capacity in million BTU per hour.

Maximum allowable particulate emissions for each fuel burning equipment unit shall be the product of the rated capacity and the emission ratio.

Hence, the calculated limits are: 0.469 lbs PM/MMBTU heat input  
12.1 lbs PM/hr

Based on AP-42 (Table 1.3.1, 9/98), PM (filterables) EF for combustion of residual oil containing 0.5% S is 7.815 lbs/1000 gal. Hence, emission rate with the worst case fuel would be:

$[7.815 \text{ lbs}/(1000 \text{ gal} \times 0.15 \text{ MMBTU}/\text{gal})] \times 25.9 \text{ MMBTU}/\text{hr} = 1.35 \text{ lbs PM}/\text{hr}$  which is lower than the limit.

9 VAC 5-40-930- SO<sub>2</sub> emission limits - The maximum emissions shall be determined by the following equation:  $S = 2.64K$ , where S = allowable emission of sulfur dioxide expressed in pounds per hour, and K = heat input at total capacity expressed in MMBTU per hour.

The calculated SO<sub>2</sub> emission limit for Boilers URN 2 and 3 combined is 68.4 lbs SO<sub>2</sub>/hr.

Based on AP-42 (Table 1.3.1, 9/98), SO<sub>2</sub> EF for combustion of residual oil containing 0.5% S is 78.5 lbs SO<sub>2</sub>/1000 gal. Hence, emission rate with the worst case fuel for the boiler would be:

$[78.5 \text{ lbs}/(1000 \text{ gal} \times 0.15 \text{ MMBTU}/\text{gal})] \times 25.9 \text{ MMBTU}/\text{hr} = 13.6 \text{ lbs SO}_2/\text{hr}$  which is lower than the limit.

Therefore, URN 51 is expected to comply with the PM and SO<sub>2</sub> limits of the Virginia Administrative Codes.

#### **Ovens URN 110 to 115 and Smoke Generators URN 120 to 123:**

The approved fuel for the ovens is natural gas (Condition 4 of 6/12/07 NSR) with no throughput limit.

Smoke generators do not use additional fuel beside the saw dust which is subject to a throughput limit (Condition 6 of 6/12/07 NSR). Emission limits for PM and VOC are listed in Condition 10 of 6/12/07 NSR. The smoke generators are also subject to 9 VAC 5-50-80, the visible emission limits for new and modified sources of 20% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity. (Condition 12 of 6/12/07 NSR)

#### **B. Monitoring**

The once-a-week visible emission observations for boilers URN 51 to 54 and 86 (Condition 14 of the 6/12/07 NSR) meet Part 70 requirements for periodic monitoring.

Permit requires maintenance of records for fuel throughputs, fuel certifications, saw dust throughput, calculated NOx emissions for URN 52, 53, and 54 to demonstrate compliance with annual emission limits, periodic visible emission observations, visible emission evaluations, maintenance, operating procedures, and boiler operator training (Condition 15 of 6/12/07 NSR permit).

### **C. Testing**

The permit does not require testing. However, the Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard (Condition 13 of 6/12/07 NSR).

### **D. Reporting**

There are no specific notification or reporting requirements other than those required under General Conditions; the modification of boilers URN 52, 53, and 54 with the addition of economizers have been completed.

### **E. Streamlined Requirements**

Condition 16 of 6/12/07 NSR- Permit Invalidation condition has not been included because the economizer project has been completed.

Other general conditions of the 6/12/07 NSR are covered under the General Conditions section of the Title V permit except for Conditions 19 and 22 of 6/13/07 NSR which are placed in the Facility Wide section.

## **VII. FACILITY WIDE CONDITIONS**

### **A. Limitations**

9 VAC 5-50-20 F-Volatile organic compound disposal condition was deemed a useful reminder for the facility.

Condition 22 of 6/12/07 NSR- DEQ may request shutdown of facility to maintain ambient air quality standards. This is a NSR general condition which is not in the Title V General Conditions.

### **B. Record Keeping**

Records of Maintenance/Operating Procedures are required by Condition 19 of 6/12/07 NSR; this is also to demonstrate compliance with General Condition O of Title V permit on Startup, Shutdown and Malfunction.

Condition 20 of 6/12/07 NSR- Records of Malfunctions. This is a NSR general condition which is not in the Title V General Conditions.

## VIII. GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

### Comments on General Conditions

#### a. Condition B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.1-20.01:2 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 2-2003".

This general condition cites Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Operating Permits for Stationary Sources, with the following sections:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

9 VAC 5-80-150. Action on Permit Applications

#### b. Condition F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

#### c. Condition J. Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits.

9 VAC 5-80-260. Enforcement.

9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1790. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas.

#### d. Condition U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

This general condition cites the sections that follow:

9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction  
9 VAC 5-80-110. Permit Content

## **IX. STATE ONLY APPLICABLE REQUIREMENTS**

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable to the rendering process:

9 VAC 5 Chapter 40, Part II, Article 2: Emission Standards for Odors

9 VAC 5-50-140- No owner or other person shall cause or permit to be discharged into the atmosphere from any affected facility any emissions which cause an odor objectionable to individuals of ordinary sensibility.

Necessary recordkeeping to demonstrate compliance are added as allowed by 9 VAC 5-80-300.

## **X. FUTURE APPLICABLE REQUIREMENTS**

There are no future applicable requirements anticipated for the facility.

## **XI. INAPPLICABLE REQUIREMENTS**

Citation	Title of Citation	Description of Applicability
40 CFR 60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	This subpart is not applicable to Emission Units URN 51 to 55, and 86. URN 51 to 54 were constructed prior to the applicability date of the NSPS, and the addition of economizers to URN 52 to 54 in 2007 does not meet the definition of NSPS modification. URN 55 and 86 are less than 10 MMBTU/hr.
9 VAC 5-40-880 et. seq., Part II, Article 8	Emissions Standards for Fuel Burning Equipment	Smokehouse and smoke generators firing cord wood and sawdust, food processing ovens URN 57 to 71, 78 to 79, and 110 to 115, and hog singers URN 91 and 92 do not meet the definition of fuel burning equipment in Article 8.  Boilers URN 55 and 86 are not subject to this article, because (1) they combust only gaseous fuels, and (2) each unit's heat input capacity is less than 10 MMBTU/hr.
40CFR 60, Subpart Kb, as amended on October 15, 2003	NSPS for Volatile Organic Liquid Storage Vessels Constructed, Modified, or reconstructed after 23 July 1984 with storage capacity greater than 75 cubic meters (19,817 gallons)	Tanks URN 82, URN 83, and URN 84 have capacities less than the threshold for Kb applicability (19,817 gallons). Tank URN 81 (27,150 gal) was not constructed, reconstructed, or modified after 23 July 1984; it also stores residual oil that has maximum true vapor pressure less than 2.16 psi.
40 CFR 60 Subpart IIII	Standards of Performance for	The facility does not have any internal

	Stationary Compression Ignition Internal Combustion Engines	combustion engines that are subject to the rule.
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The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A 3 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions". For example, see **Condition III.A.11** on opacity limits for existing boiler URN 51 that complies with the above regulations.

## XII. COMPLIANCE PLAN

There is no compliance plan associated with this permit.

## XIII. INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation <sup>1</sup>	Pollutant(s) Emitted (9 VAC 5-80-720B)	Rated Capacity (9 VAC 5-80-720 C)
55	Continental natural gas-fired boiler, manufactured and installed in 1962	9 VAC 5-80-720C	NA	4.3 million Btu/hr
57	Julian Food Processing Oven	9 VAC 5-80-720C	NA	2.9 million Btu/hr
58	Julian Food Processing Oven	9 VAC 5-80-720C	NA	2.9 million Btu/hr
59	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr
60	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr
61	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr
62	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr
63	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
64	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr

Emission Unit No.	Emission Unit Description	Citation <sup>1</sup>	Pollutant(s) Emitted (9 VAC 5-80-720B)	Rated Capacity (9 VAC 5-80-720 C)
65	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
66	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
67	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
68	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
69	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
70	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
71	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
78	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr
79	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr
81	Residual Oil Storage Tank, 27,150-gal AST	9 VAC 5-80-720B	VOC	NA
82	Diesel Fuel Dispensing Tank, 550-gal AST	9 VAC 5-80-720A	VOC	NA
83	Hydraulic Oil Storage Tank, AST	9 VAC 5-80-720C	NA	500 gallons
84	Refrigeration Oil Tank, AST	9 VAC 5-80-720C	NA	500 gallons
85	Meat Smokehouse	9 VAC 5-80-720B	PM, VOC	NA
88F	Wastewater Treatment, 2 MM gal/day	9 VAC 5-80-720B	VOC	NA
91	Stork Nijhuis Hog Singer, 8.1 million Btu/hr	9 VAC 5-80-720B	PM	NA
92	Stork Nijhuis Hog Singer, 8.1 million Btu/hr	9 VAC 5-80-720B	PM	NA
93	Bacon Grease Tank, 9,000-gal AST	9 VAC 5-80-720 A	NA	NA
94	Bacon Grease Tank, 9,000-gal AST	9 VAC 5-80-720 A	NA	NA
95	Gasoline Tank, 1,000-gal AST	9 VAC 5-80-720 B	VOC	NA
96	Used Oil Tank, 1,000-gal AST	9 VAC 5-80-720 B	VOC	NA
97	Waste Oil from Remediation Project, AST	9 VAC 5-80-720 C	NA	250 gallons
TS-1 & TS-2	Two (2) Truck Shop used oil heaters, Model CB-2500 Clean Burn Energy Systems, 250,000 Btu/hr each	9 VAC 5-80-720 B	SO <sub>2</sub>	



Emission Unit No.	Emission Unit Description	Citation <sup>1</sup>	Pollutant(s) Emitted (9 VAC 5-80-720B)	Rated Capacity (9 VAC 5-80-720 C)
TS-3	Truck Shop hot water heater, 1999, natural gas, Niagara Model 10,000	9 VAC 5-80-720 C	NA	880,000 BTU/hr
TS-4 & TS-5	Two (2) Truck Shop USTs for diesel, 25,000 gal each	9 VAC 5-80-720 A	NA	NA
TS-6 to 9	Four (4) Truck Shop ASTs, 1,500 gal each, two for new motor oil, and two for used oil	9 VAC 5-80-720 B	VOC	
TS-10	Truck Shop AST for used oil	9 VAC 5-80-720 C	NA	275 gal
TS-11	Truck Shop AST for used antifreeze, 250 gal	9 VAC 5-80-720 B	VOC	
TS-12	Truck Shop AST for used oil	9 VAC 5-80-720 C	NA	500 gal
TS-13 to 28	Truck Shop sixteen (16) natural gas heaters, 1999	9 VAC 5-80-720 C	NA	52,000 BTU/hr each

<sup>1</sup>The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

#### **XIV. CONFIDENTIAL INFORMATION**

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

#### **XV. PUBLIC PARTICIPATION**

The proposed permit will be placed on public notice in The Virginian-Pilot from February 17, 2008 to March 18, 2008.

## **STATEMENT OF LEGAL AND FACTUAL BASIS, PART 3**

### **THE SMITHFIELD PACKING CO., INC.- HAM AND PRODUCTS DIVISION**

#### **I. FACILITY INFORMATION**

Permittee

The Smithfield Packing Co., Inc.  
P.O. Box 489  
Smithfield, VA 23430

Facility

The Smithfield Packing Co., Inc.-Ham and Products Division  
401 North Church Street  
Smithfield, VA 23430

County-Plant Identification Number: 51-093-00011

#### **II. SOURCE DESCRIPTION**

NAICS Codes: NAICS 311613 and 311615- Meat Processing (including Poultry).

Smithfield Packing Co., Inc.-Ham and Products Division, a meat processing plant, together with Smithfield Packing Co., Inc.-North Division, a contiguous meat packing plant, and Smithfield Packing Co., Inc.-South Division, a contiguous meat packing and rendering plant, are independently operated facilities that operate under the common control of Smithfield Packing Co., Inc. The three facilities have been determined, under Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution (9 VAC 5, Chapter 80), to represent a single stationary source of air emissions. Based on the NSR permit limits and the potential to emit of non-permitted units, the source is Title V major for SO<sub>2</sub>, NO<sub>x</sub>, and CO. Located in an attainment area, it is also PSD major for those pollutants, belonging to one of the 28 source categories with fossil fuel boilers totaling more than 250 million BTU/hour heat input. A three-part Title V permit format is used to reflect each facility's compliance responsibilities delegated by Smithfield Packing Co., Inc., to facilitate direct compliance relationships between the state and the three facilities.

Ham and Products Division has no NSR permit. All boilers have been removed from the plant and replaced by a rental natural gas boiler (URN- R1). The latter is exempt from minor new source review (NSR) permitting based on size (heat input capacity less than 10 million BTU/hr), and meets the definition of an Insignificant Activity pursuant to 9 VAC 5-80-720 C. Other process units also qualify as Insignificant Activities; therefore, the facility no longer has any significant emission units. Because each of the three permittees under common control of Smithfield Packing Co., Inc. still wishes to have their own permit with clearly defined compliance responsibilities, Ham and Products Division must also have its own Title V permit as Part 3 of a three-part permit.

#### **III. COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

#### **IV. EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION**

The facility has no significant emission units.

#### **V. EMISSIONS INVENTORY**

A copy of the 2006 annual emission update is attached. Emissions are summarized in the following tables.

2006 Actual Emissions

	2006 Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>
Total	0.1	0.5	0.0	0.1	0.6

2006 Facility Hazardous Air Pollutant Emissions

Pollutant	2006 Hazardous Air Pollutant Emission in Tons/Yr
Formaldehyde	0.000
Lead Compounds	0.0000

#### **VI. FACILITY WIDE CONDITIONS**

##### **A. Limitations**

9 VAC 5-50-20 F-Volatile organic compound disposal condition was deemed appropriate for the facility.

DEQ may request shutdown of facility to maintain ambient air quality standards. This is repeating a general condition which is not in the Title V General Conditions but present in the NSR permits for the North and South Divisions.

##### **B. Record Keeping**

Records of Maintenance/Operating Procedures are required to demonstrate compliance with General Condition O of Title V permit on Startup, Shutdown and Malfunction.

Records of Malfunctions are required, similar to a NSR general condition which is not in the Title V General Conditions but present in the NSR permits for the North and South Divisions.

## VII. GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

### Comments on General Conditions:

#### a. Condition B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.1-20.01:2 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 2-2003".

This general condition cites Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Operating Permits for Stationary Sources, with the following sections:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

9 VAC 5-80-150. Action on Permit Applications

#### b. Condition F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

#### c. Condition J. Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits

9 VAC 5-80-260. Enforcement

9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1790. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas

#### d. Condition U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F. This general condition cites the sections that follow:

9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction

9 VAC 5-80-110. Permit Content

## VIII. STATE ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable to the rendering process:

9 VAC 5 Chapter 40, Part II, Article 2: Emission Standards for Odors

9 VAC 5-50-140- No owner or other person shall cause or permit to be discharged into the atmosphere from any affected facility any emissions which cause an odor objectionable to individuals of ordinary sensibility.

Necessary recordkeeping requirements to demonstrate compliance are added as allowed by 9 VAC 5-80-300.

## IX. FUTURE APPLICABLE REQUIREMENTS

There are no future applicable requirements anticipated for the facility.

## X. INAPPLICABLE REQUIREMENTS

Citation	Title of Citation	Description of Applicability
40 CFR 60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	This subpart is not applicable to the facility as it has only one rental natural gas boiler URN-R1 with a heat input capacity less than 10 MMBTU/hr.
9 VAC 5-40-880 et. seq., Part II, Article 8	Emissions Standards for Fuel Burning Equipment	Food processing ovens URN 105 and 106, and smoke generator URN 107 do not meet the definition of fuel burning equipment in Article 8.  Rental boiler Boilers URN-R1 combusts only natural gas and its heat input capacity is less than 10 MMBTU/hr.
40CFR 60, Subpart Kb, as amended on October 15, 2003	NSPS for Volatile Organic Liquid Storage Vessels Constructed, Modified, or reconstructed after 23 July 1984 with storage capacity greater than 75 cubic meters (19,817 gallons)	The facility does not have any tank with storage capacity greater than 19,817 gallons.
40 CFR 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	The facility does not have any internal combustion engines that are subject to the rule.

## **XI. COMPLIANCE PLAN**

There is no compliance plan associated with this permit.

## **XII. INSIGNIFICANT EMISSION UNITS**

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation <sup>1</sup>	Pollutant(s) Emitted (9 VAC 5-80-720B)	Rated Capacity (9 VAC 5-80-720 C)
N/A	Used oil heater, Model CB-1400 Clean Burn Energy Systems, 140,000 Btu/hr	9 VAC 5-80-720 B	SO <sub>2</sub>	
N/A	AST for used oil, 1,500 gal	9 VAC 5-80-720 B	VOC	
R-1	Natural Gas Rental Boiler	9 VAC 5-80-720C	NA	8.37 MMBTU/hr
105	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	0.55 MMBTU/hr
106	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	0.55 MMBTU/hr
107	Kartridge Pak Smoke Generator, 29,000 Btu/hr	9 VAC 5-80-720B	VOC, PM	

<sup>1</sup>The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

## **XIII. CONFIDENTIAL INFORMATION**

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

## **XIV. PUBLIC PARTICIPATION**

The proposed permit will be placed on public notice in The Virginian-Pilot from February 17, 2008 to March 18, 2008.